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<110> KYOWA HAKKO KOGYO CO., LTD.

<120> GENOMICALLY MODIFIED CELL NEUTRALIZED TO SERUM-FREE SYSTEM

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<141> 2006-04-10

<150> PCT/JP2004/015315

<151> 2004-10-08

<150> JP2003-350166

<151> 2003-10-09

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<170> PatentIn Ver. 2.1

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Pro	Leu	Ala	Val	Pro	Glu	Asp	Leu	Ala	Asp	Arg	Leu	Leu	Arg	Val	His	
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Gly	Asp	Pro	Ala	Val	Trp	Trp	Val	Ser	Gln	Phe	Val	Lys	Tyr	Leu	Ile	
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Arg	Pro	Gln	Pro	Trp	Leu	Glu	Lys	Glu	Ile	Glu	Glu	Ala	Thr	Lys	Lys	
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Leu	Gly	Phe	Lys	His	Pro	Val	Ile	Gly	Val	His	Val	Arg	Arg	Thr	Asp	
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Lys	Val	Gly	Thr	Glu	Ala	Ala	Phe	His	Pro	Ile	Glu	Glu	Tyr	Met	Val	
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His	Val	Glu	Glu	His	Phe	Gln	Leu	Leu	Ala	Arg	Arg	Met	Gln	Val	Asp	
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Lys	Lys	Arg	Val	Tyr	Leu	Ala	Thr	Asp	Asp	Pro	Thr	Leu	Leu	Lys	Glu	
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Ala	Lys	Thr	Lys	Tyr	Ser	Asn	Tyr	Glu	Phe	Ile	Ser	Asp	Asn	Ser	Ile	
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Cys Thr Phe Ser Ser Gln Val Cys Arg Val Ala Tyr Glu Ile Met Gln
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Thr Leu His Pro Asp Ala Ser Ala Asn Phe His Ser Leu Asp Asp Ile
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Tyr Tyr Phe Gly Gly Gln Asn Ala His Asn Gln Ile Ala Val Tyr Pro
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His Lys Pro Arg Thr Glu Glu Glu Ile Pro Met Glu Pro Gly Asp Ile
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Ile Gly Val Ala Gly Asn His Trp Asp Gly Tyr Ser Lys Gly Ile Asn
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<211> 446

<212> PRT

<213> Homo sapiens

<400> 7

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Ser Ile Met Thr Asp Leu Tyr Tyr Leu Ser Gln Thr Asp Gly Ala Gly
35 40 45

Asp Trp Arg Glu Lys Glu Ala Lys Asp Leu Thr Glu Leu Val Gln Arg
50 55 60

Arg Ile Thr Tyr Leu Gln Asn Pro Lys Asp Cys Ser Lys Ala Lys Lys
165 70 75 80

Leu Val Cys Asn Ile Asn Lys Gly Cys Gly Tyr Gly Cys Gln Leu His
85 90 95

His Val Val Tyr Cys Phe Met Ile Ala Tyr Gly Thr Gln Arg Thr Leu
100 105 110

Ile Leu Glu Ser Gln Asn Trp Arg Tyr Ala Thr Gly Gly Trp Glu Thr
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Thr Gly His Trp Ser Gly Glu Val Lys Asp Lys Asn Val Gln Val Val

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Glu Leu Pro Ile Val Asp Ser Leu His Pro Arg Pro Pro Tyr Leu Pro						
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Asp Pro Ala Val Trp Trp Val Ser Gln Phe Val Lys Tyr Leu Ile Arg						
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Pro Gln Pro Trp Leu Glu Lys Glu Ile Glu Glu Ala Thr Lys Lys Leu						
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Gly Phe Lys His Pro Val Ile Gly Val His Val Arg Arg Thr Asp Lys						
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Val Gly Thr Glu Ala Ala Phe His Pro Ile Glu Glu Tyr Met Val His						
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Val Glu Glu His Phe Gln Leu Leu Ala Arg Arg Met Gln Val Asp Lys						
	260			265		270
Lys Arg Val Tyr Leu Ala Thr Asp Asp Pro Ser Leu Leu Lys Glu Ala						
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Lys Thr Lys Tyr Pro Asn Tyr Glu Phe Ile Ser Asp Asn Ser Ile Ser						
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Trp Ser Ala Gly Leu His Asn Arg Tyr Thr Glu Asn Ser Leu Arg Gly						
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Val Ile Leu Asp Ile His Phe Leu Ser Gln Ala Asp Phe Leu Val Cys						
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Thr Phe Ser Ser Gln Val Cys Arg Val Ala Tyr Glu Ile Met Gln Thr						
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Leu His Pro Asp Ala Ser Ala Asn Phe His Ser Leu Asp Asp Ile Tyr						
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Tyr Phe Gly Gly Gln Asn Ala His Asn Gln Ile Ala Ile Tyr Ala His						
	370			375		380
Gln Pro Arg Thr Ala Asp Glu Ile Pro Met Glu Pro Gly Asp Ile Ile						
385		390		395		400
Gly Val Ala Gly Asn His Trp Asp Gly Tyr Ser Lys Gly Val Asn Arg						
	405			410		415
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<211> 575

<212> PRT

<213> Sus scrofa

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Arg	Ser	Ile	Met	Thr	Asp	Leu	Tyr	Tyr	Leu	Ser	Gln	Thr	Asp	Gly	Ala
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Lys	Leu	Val	Cys	Asn	Ile	Asn	Lys	Gly	Cys	Gly	Tyr	Gly	Cys	Gln	Leu
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Val	Glu	Leu	Pro	Ile	Val	Asp	Ser	Val	His	Pro	Arg	Pro	Pro	Tyr	Leu		
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Ala	Lys	Thr	Lys	Tyr	Pro	Ser	Tyr	Glu	Phe	Ile	Ser	Asp	Asn	Ser	Ile		
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<210> 10
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic DNA

<400> 10
gagacttcag cccacttcaa ttattggc 28

<210> 11
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic DNA

<400> 11
cttgtgtgac tcttaactct cagag 25

<210> 12

<211> 25
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic DNA

 <400> 12
 gaggccactt gtgtagcgcc aagtg 25

 <210> 13
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic DNA

 <400> 13
 ccctcgagat aacttcgtat agc 23

 <210> 14
 <211> 18
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence : Synthetic DNA

 <400> 14
 ggtaggcctc actaactg 18

 <210> 15
 <211> 25
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence : Synthetic DNA

 <400> 15
 catagaaaca agtaacaaca gccag 25

 <210> 16
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic DNA

 <400> 16
 gtgagtccat ggctgtcact g 21

<210> 17
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic DNA

<400> 17
 cctgacttgg ctattctcag 20

<210> 18
 <211> 384
 <212> DNA
 <213> Mus musculus

<400> 18
 atg gat ttt cag gtg cag att atc agc ttc ctg cta atc agt gct tca 48
 Met Asp Phe Gln Val Gln Ile Ile Ser Phe Leu Leu Ile Ser Ala Ser
 1 5 10 15
 gtc ata atg tcc aga gga caa att gtt ctc tcc cag tct cca gca atc 96
 Val Ile Met Ser Arg Gly Gln Ile Val Leu Ser Gln Ser Pro Ala Ile
 20 25 30
 ctg tct gca tct cca ggg gag aag gtc aca atg act tgc agg gcc agc 144
 Leu Ser Ala Ser Pro Gly Glu Lys Val Thr Met Thr Cys Arg Ala Ser
 35 40 45
 tca agt gta agt tac atc cac tgg ttc cag cag aag cca gga tcc tcc 192
 Ser Ser Val Ser Tyr Ile His Trp Phe Gln Gln Lys Pro Gly Ser Ser
 50 55 60
 ccc aaa ccc tgg att tat gcc aca tcc aac ctg gct tct gga gtc cct 240
 Pro Lys Pro Trp Ile Tyr Ala Thr Ser Asn Leu Ala Ser Gly Val Pro
 65 70 75 80
 gtt cgc ttc agt ggc agt ggg tct ggg act tct tac tct ctc acc atc 288
 Val Arg Phe Ser Gly Ser Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile
 85 90 95
 agc aga gtg gag gct gaa gat gct gcc act tat tac tgc cag cag tgg 336
 Ser Arg Val Glu Ala Glu Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Trp
 100 105 110
 act agt aac cca ccc acg ttc gga ggg ggg acc aag ctg gaa atc aaa 384
 Thr Ser Asn Pro Pro Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
 115 120 125

<210> 19
 <211> 420
 <212> DNA
 <213> Mus musculus

<400> 19
 atg ggt tgg agc ctc atc ttg ctc ttc ctt gtc gct gtt gct acg cgt 48
 Met Gly Trp Ser Leu Ile Leu Leu Phe Leu Val Ala Val Ala Thr Arg
 1 5 10 15
 gtc ctg tcc cag gta caa ctg cag cag cct ggg gct gag ctg gtg aag 96
 Val Leu Ser Gln Val Gln Leu Gln Gln Pro Gly Ala Glu Leu Val Lys

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cct ggg gcc tca gtg aag atg tcc tgc aag gct tct ggc tac aca ttt				144
Pro Gly Ala Ser Val Lys Met Ser Cys Lys Ala Ser Gly Tyr Thr Phe				
	35	40	45	
acc agt tac aat atg cac tgg gta aaa cag aca cct ggt cgg ggc ctg				192
Thr Ser Tyr Asn Met His Trp Val Lys Gln Thr Pro Gly Arg Gly Leu				
	50	55	60	
gaa tgg att gga gct att tat ccc gga aat ggt gat act tcc tac aat				240
Glu Trp Ile Gly Ala Ile Tyr Pro Gly Asn Gly Asp Thr Ser Tyr Asn				
	65	70	75	80
cag aag ttc aaa ggc aag gcc aca ttg act gca gac aaa tcc tcc agc				288
Gln Lys Phe Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser				
	85	90	95	
aca gcc tac atg cag ctc agc agc ctg aca tct gag gac tct gcg gtc				336
Thr Ala Tyr Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val				
	100	105	110	
tat tac tgt gca aga tcg act tac tac ggc ggt gac tgg tac ttc aat				384
Tyr Tyr Cys Ala Arg Ser Thr Tyr Tyr Gly Gly Asp Trp Tyr Phe Asn				
	115	120	125	
gtc tgg ggc gca ggg acc acg gtc acc gtc tct gca				420
Val Trp Gly Ala Gly Thr Thr Val Thr Val Ser Ala				
	130	135	140	

<210> 20
 <211> 91
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic DNA

<400> 20
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 cttcctgcta atcagtgcctt cagtcaaat g 91

<210> 21
 <211> 91
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic DNA

<400> 21
 gtgaccttct ccctggaga tgcagacagg attgctggag actgggagag aacaatttgt 60
 cctctggaca ttatgactga agcactgatt a 91

<210> 22
 <211> 90
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic DNA

<400> 22
ctccagggga gaaggtcaca atgacttgca gggccagctc aagtgttaagt tacatccact 60
ggttccagca gaagccagga tcctcccca 90

<210> 23
<211> 89
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic DNA

<400> 23
ccagaccac tgccactgaa gcgaacaggg actccagaag ccagggttga tgtggcataa 60
atccagggtt tgggggagga tcctggctt 89

<210> 24
<211> 91
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic DNA

<400> 24
tcagtggcag tgggtctggg acttcttact ctctcaccat cagcagagtg gaggtgaag 60
atgctgccac ttattactgc cagcagtga c 91

<210> 25
<211> 90
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic DNA

<400> 25
gttttcccag tcacgaccgt acgtttgatt tccagcttgg tccccctcc gaacgtgggt 60
gggttactag tccactgctg gcagtaataa 90

<210> 26
<211> 99
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic DNA

<400> 26
caggaaacag ctatgacgcg gccgcgaccc ctccaccatgg gttggagcct catcttgctc 60
ttccttgctg ctgttgctac gcgtgtcctg tcccaggta 99

<210> 27
<211> 98
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic DNA

<400> 27
atgtgtagcc agaagccttg caggacatct tcttgaggc cccagccttc accagctcag 60
ccccaggctg ctgcagttgt acctgggaca ggacacgc 98

<210> 28
<211> 97
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic DNA

<400> 28
caaggtttct ggctacacat ttaccagtta caatatgcac tgggtaaaac agacacctgg 60
tcggggcctg gaatggattg gagctattta tcccga 97

<210> 29
<211> 99
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic DNA

<400> 29
gtaggctgtg ctggaggatt tgtctgcagt caatgtggcc ttgcctttga acttctgatt 60
gtaggaagta tcaccatttc cgggataaat agctccaat 99

<210> 30
<211> 99
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic DNA

<400> 30
aatcctccag cacagcctac atgcagctca gcagcctgac atctgaggac tctgcggtct 60
attactgtgc aagatcgact tactacggcg gtgactggt 99

<210> 31
<211> 98

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic DNA

<400> 31

gttttcccag tcacgacggg cccttggtgg aggctgcaga gacggtgacc gtggtccctg 60
cgccccagac attgaagtac cagtcaccgc cgtagtaa 98

<210> 32

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic DNA

<400> 32

gagctggtga agcctggggc ctcag 25